

REMARKS

This is in response to the non-final Official Action currently outstanding with regard to the present application.

Claims 1-10 were pending in this application at the time of the issuance of the currently outstanding Official Action. Claims 8-10 stand withdrawn from further consideration as a result of an oral election by Applicants' undersigned representative during a telephone conversation with the Examiner on 16 January 2007. By the foregoing Amendment, Applicants seek approval of the corrected drawings attached, and also have amended the specification of this application in response to the Examiner's comments. Further, Applicants have amended Claims 1, 4 and 6 to correct inadvertent phraseology errors contained therein. No new claims have been added or cancelled. Accordingly, upon the entry of the foregoing Amendment, Claims 1-7 as hereinabove amended, will constitute the claims under active prosecution in this application.

The claims of this application are reproduced above including appropriate status identifiers and showing the Amendments made as required by the Rules.

More particularly, in the currently outstanding Official Action the Examiner has:

1. Acknowledged Applicants' claim for foreign priority under 35 USC §119 (a)-(d) or (f), and confirmed the receipt of the required copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a));

2. Indicated the drawings filed as part of this application on 10 January 2005 are objected to on the grounds that Figures 13, 15 and 16A-16C should be designated by a legend such as -- PRIOR ART -- because only that which is old is shown therein, that the reference numeral 21 referred to in the specification as appearing in FIG. 2 does not appear in any of FIGS. 2A-2C of the drawings, and the reference characters 2A, 2B, 2C, 6A, 6B, 6C, 7A, 7B and 7C contained in the drawings do not appear in the specification – **By the foregoing Request for Drawing Change Approval Applicants seek approval of amendments to FIGS. 2B, 2C, 13, 15 and 16A-16C that correct the errors noted by the Examiner with respect to those FIGS. Further, by the foregoing Amendment, Applicants have amended the present specification so as to include therein specific reference to the reference numerals 2A, 2B, 2C, 6A, 6B, 6C, 7A, 7B, and 7C that were noted by the Examiner to be missing from the specification of this application as originally filed. Accordingly, upon the entry of the foregoing requested drawing changes and amendments to the present specification, Applicant respectfully submits that the Examiner's outstanding objections to the drawings will be rendered moot, and requests a decision so holding in response to this submission;**
3. Acknowledged his consideration of the Information Disclosure Statement filed in this application on 10 January 2005 by providing the Applicants with a copy of the Form PTO/SB/08a/b that accompanied that Statement duly signed, dated and initialed by the Examiner to confirm the consideration of the art listed therein;
4. Objected to Title of the Invention as being non-descriptive in view of Applicants' election and suggested a new title of the invention – **Applicants have adopted the Examiner's suggested new Title of the Invention in the foregoing Amendment thereby rendering the Examiner's objection to the original Title of the Invention moot. A decision so holding in response to this submission is respectfully requested;**

5. Rejected Claims 1, 3 and 5 under 35 USC §102(c) as being anticipated by Higuchi et al. (US Patent No. 6,802,596 B2);
7. Rejected Claim 2 under 35 USC §103(a) as being unpatentable over Higuchi et al. (US Patent No. 6,802,596 B2) as applied to claim 1, and further in view of Narita et al. (JP 05092561 A);
8. Rejected Claim 4 under 35 USC §103(a) as being unpatentable over Higuchi et al., (US Patent No. 6,802,596 B2) as applied to claim 1, and further in view of Sagara, (US Patent Publication No. 2005/0068374 A1); and
9. Rejected Claims 6 and 7 under 35 USC §103(a) as being unpatentable over Higuchi et al. (US Patent No. 6,802,596 B2) in view of Sagara, (US Patent Publication No. 2005/0068374 A1).

No further comment regarding items 1-4 above is deemed to be required in these Remarks.

With respect to items 6-9, the Examiner has suggested that the Higuchi et al reference teaches “forming at least some of the projecting electrodes wider than the width of ink chamber in the direction orthogonal to the ink discharge direction, ensuring the electrical connection between electrodes located in ink chamber and projection electrode” citing the Higuchi et al reference at Column 25, lines 12-16 and Figures 15 and 19B. Applicants generally agree, *but respectively note that the elements designated by the reference numeral 442 in Figure 19B are “outer leads”, not “projection electrodes” of the type designated by the reference numeral 343 in Figure 15.* More specifically, the “projection electrodes” of the Higuchi reference are formed on the outer leads (see Higuchi et al at Column 22, lines 59-67, and Column 25, lines 17-20) and are designed to penetrate into the conductive resin at the rear end of the ink chambers (see, for example, Higuchi et al at Column 25, lines 4-22). *Further, the projection electrodes can be such as are shown for example at reference numeral 343 in FIGS. 15 and 16 of the Higuchi et al reference, or as Au plated bumps or the like formed on the surface of the outer leads (see Higuchi et al at Column 19, lines 45-50)*

More importantly, however, Applicants respectfully note that *the present claims are not directed to either a “projection electrode” (See reference numeral 343) or to an “outer lead” (See reference numerals 342 and 442) of the type referred to in the Higuchi et al reference.* Rather, the claims of the present application are directed to external circuit connecting electrodes that are individually formed on exposed regions at a rear portion of the ink jet head where individual stripes of said electrically conductive material are exposed (See, for example, rear edge of element 310 in Figure 12B or element 410 of Figure 19B of the Higuchi et al reference). Further, Applicants respectfully note that as presently claimed the **planar area** of these exposed surface regions is made larger than the cross-sectional areas of the respective ink chambers **as measured in the groove width direction.**

In order to facilitate the Examiner’s understanding of these latter points, Applicants are attaching an explanatory drawing as part of these Remarks. In the attached explanatory drawing, it is clearly and unequivocally shown that unlike the Higuchi et al reference, the present invention is directed to an ink jet head in which the area indicated at S2 as the external circuit connecting electrode is larger than the cross-sectional area S1 of the ink chamber.

Accordingly, Applicants respectfully submit that a comparison of the attached explanatory drawing with the Examiner's currently outstanding rejection clearly and definitively indicates that the features of the Higuchi et al reference relied upon by the Examiner as disclosing the elements of the currently pending claims of this application in fact do not teach, disclose or suggest the elements of the presently pending claims at all.

Thus, it will be seen that in the present application the external circuit connecting electrode of the claimed ink jet head – not the external circuitry - is formed on the exposed surface region at a rear end portion of the ink jet head. This external circuit connecting electrode is adapted for connection to the external circuit electrode that corresponds to the "outer lead" of the Higuchi et al reference either directly or via a projection electrode.

Further, it will be noted that in the Higuchi et al reference the area of the external circuit connecting electrode S2 is the same as the cross-sectional area of the ink chamber 2 as measured in the groove width direction unlike the present invention wherein the cross-sectional area of the external circuit connecting electrode S2 is larger than the cross-sectional area of the ink chamber 2 as measured in the groove width direction (as opposed to the groove length or some other direction).

Furthermore, Applicants respectfully further note that in the embodiment shown in the Higuchi et al reference at Figure 15, a "concave 326a is provided for positioning the projection electrode 343, and in Figure 16, a groove formed by inclining planes 326b is provided for positioning the projection electrode 343. In either case, however, the respective projection electrodes are to be inserted into the electrically conductive material contained in the respective ink channels in order to contact ends of the electrodes that extend along the side walls of the grooves (See Column 25, lines 38-52 of Higuchi et al).

Applicants respectfully submit, therefore, that the outer leads 342 and 442 respectively depicted in FIGS. 15 and 19B of the Higuchi reference that correspond to the external circuit electrodes 52 of the present invention do not correspond to the presently claimed external circuit connecting electrodes formed on the exposed surface regions at the rear end portion of the claimed ink jet head. Further, Applicants respectfully submit that the cross-sectional area of the portions of the Higuchi et al reference that do correspond to the external circuit connecting electrodes of the present invention respectively are clearly not larger than the associated cross-sectional area of the ink chambers as also is made clear by the attached explanatory drawing.

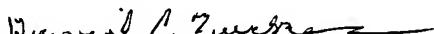
Accordingly, Applicants respectfully submit that it is clear that neither the outer leads 342, 442, nor the projecting electrodes 343, of the Higuchi et al reference meet the limitations of the present claims. Therefore, Applicants respectfully submit that the currently outstanding rejections of the claims of this application should be withdrawn. A decision so holding in response to this submission is respectfully requested.

For each and all of the foregoing reasons, therefore, entry of the foregoing Amendment, reconsideration and allowance of all of the claims present in this application after the entry of this Amendment in response to this submission are respectfully requested.

Applicants also believe that additional fees beyond those submitted herewith are not required in connection with the consideration of this response to the currently outstanding Official Action. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge and/or credit Deposit Account No. 04-1105, as necessary, for the correct payment of all fees which may be due in connection with the filing and consideration of this communication.

Respectfully submitted,

Date: April 30, 2007


David A. Tucker
SIGNATURE OF PRACTITIONER

Reg. No.: 27,840

David A. Tucker
(type or print name of practitioner)
Attorney for Applicant(s)

Tel. No. (617) 517-5508

Edwards Angell Palmer & Dodge LLP
P.O. Box 55874
P.O. Address

Customer No.: 21874

Boston, MA 02205

603753